



## PRODUCT BRIEF

# INTEL® XEON® PROCESSOR E3-1200 V5 PRODUCT FAMILY

A Versatile Platform to Meet a Range of Business Needs



Business computing needs are becoming increasingly sophisticated. Applications that help automate design or iterate financial scenarios are becoming more demanding. Because of these needs, entry-level servers and workstations are becoming foundational to many businesses. At the same time, IT professionals are facing increasing demands for hardware, space, and energy efficiency. Specific solutions for integrated data center graphics workloads are emerging as additional ways to control costs while delivering application-optimized solutions. Business leaders recognize that the Internet has transformed their internal operations and that when they invest in technology, it can bring a competitive advantage, help grow their business, and manage costs while being more productive. Businesses of all sizes must keep up with market dynamics, evolving customer expectations, and the multitude of applications and data. They must be creative in how they support their customers and ultimately grow. Meet the latest Intel® Xeon® processor E3-1200 v5 product family-based platforms—a smart investment for a wide range of business needs and sizes.

In addition to gains in CPU performance, CPU performance per watt, and graphics performance, Intel Xeon processor E3-1200 v5 product family-based platforms offer fast access to data, protect the data's integrity, and have proven reliability for a range of business needs. Explore the expanded product line to discover new options for data center graphics, in addition to traditional entry-level server and workstation applications.

### Built for Professionals

Step up to the performance and visuals demanded by professional-grade CAD or media and entertainment applications. With Intel Xeon processor E3-1200 v5 product family-based workstations, you'll find the capabilities that get designers, engineers, and animators started.

Accelerate exploration of complex data with the graphics performance of Intel® HD Graphics P530. Improve the integrity and uptime of design data with ECC memory technology. And with Intel® vPro™ technology, you can make sure your workstations are as secure and manageable as any PC in your organization's fleet.<sup>1,2</sup>

Media and entertainment animators, artists, and editors looking to accelerate nonlinear editing or test select special effects—such as blur and motion filters—can work with greater efficiency. Imaging experts are supported by advanced features, access to OpenCL\* acceleration, and fast processing performance. Your software benefits because the Intel Xeon processor E3-1200 v5 product family has been certified on and optimized for a wide range of third-party ISV applications.

### Reliability for Small and Medium Businesses

No matter what the size of your business, the value of your data is enormous. Keep it accessible and better protected at all times with an affordable Intel Xeon processor E3-1200 v5 product family-based server.

## 2 Intel® Xeon® Processor E3-1200 v5 Product Family

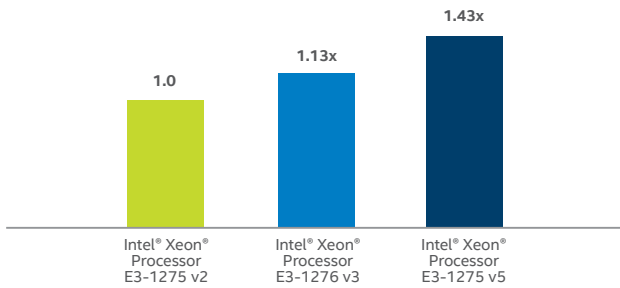
For a small or medium business, all of your data is your data center and is your connection to customers, sales, inventory, financial records, and ultimately growth. Protect your customer, inventory, and financial records with a server that delivers the integrity and reliability of an all-day, all-night workhorse. Implementing a powerful server is also a smart investment in growth. You'll gain the power to deploy new business-class applications and tools that can help you increase sales and

improve margins. A server based on the Intel Xeon processor E3-1200 v5 product family lets you access your information faster and respond to customers sooner from any device on your network. Keep valuable business data safe, help you and your employees become more productive, and position your company for growth with a powerful and affordable small business server based on the Intel Xeon processor E3 family.

### CPU Performance

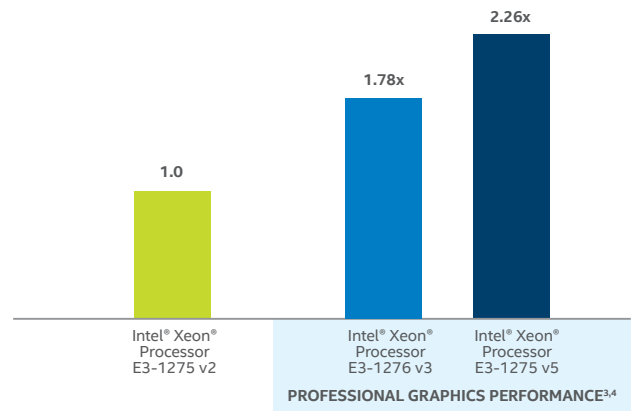
Intel® Xeon® Processor E3 Processor Family  
Generational Performance Gains

HIGHER IS BETTER



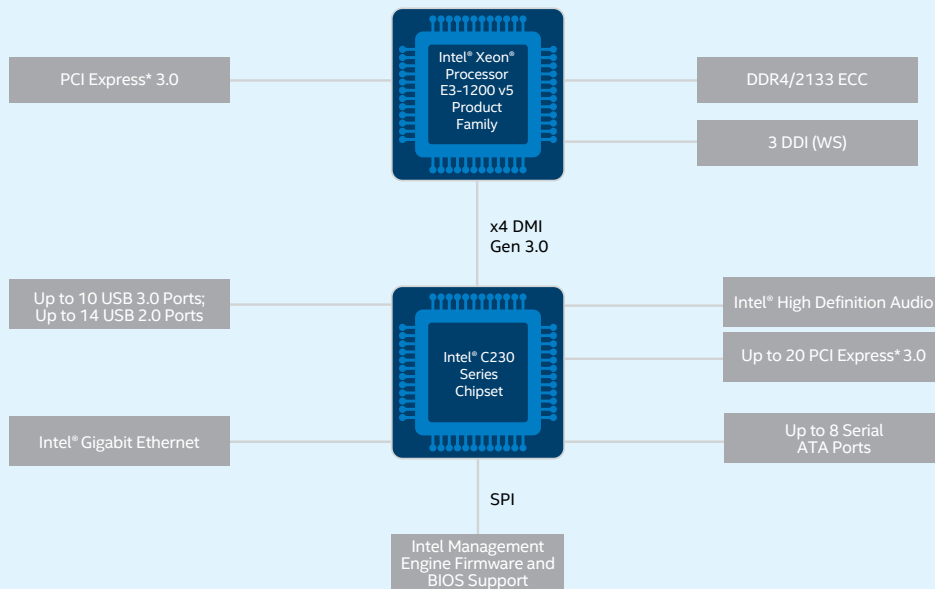
### Graphics Performance

Intel® Xeon® Processor E3 Processor Family with Intel® HD Graphics P530  
Generational Performance Gains



The Intel® Xeon® Processor E3-1275 v5 provides up to 1.43x the compute performance and 2.26x the graphics performance of prior generations.<sup>4</sup>

### Typical Intel® Xeon® Processor E3 Platform Configuration



Features may vary depending on processor and chipset SKUs.

**INTEL® XEON® PROCESSOR E3-1200 V5 PRODUCT FAMILY OVERVIEW**

<b>FEATURES</b>	<b>BENEFITS</b>
Intel® Xeon® Processor E3-1200 v5 product family	Server and workstation-class performance, reliability, and security at entry-level price points <ul style="list-style-type: none"> <li>• Accelerate your business growth with up to 1.43x better performance than the first generation of Intel Xeon processor E3 1200 family-based workstations<sup>3,4,5</sup></li> </ul>
Skylake microarchitecture	Enhanced energy efficiency and performance <ul style="list-style-type: none"> <li>• Intel's industry-leading 14nm process technology</li> </ul>
<b>Reliability and Security to Protect Your Business</b>	
Support for error-correcting code (ECC) memory	Better data integrity and system reliability through automatic data correction
Intel® Rapid Storage Technology enterprise 4.x <sup>6</sup> (Intel RSTe) for servers	Uninterrupted operation and quick data recovery in the event of a hard drive failure <ul style="list-style-type: none"> <li>• Supports latest server operating systems (OSs), including Red Hat* and SUSE* Linux* OSs</li> </ul>
Intel Rapid Storage Technology 14.x <sup>6</sup> (Intel RST) for workstations	Uninterrupted operation and quick data recovery in the event of a hard drive failure <ul style="list-style-type: none"> <li>• Dynamic storage acceleration—dynamically adjusts system power state policies based on I/O loading conditions and power profile</li> </ul>
Intel® Data Protection Technology (with Advanced Encryption Standard New Instructions <sup>7</sup> (AES-NI))	Improves security by encrypting data—without slowing response times
Intel Data Protection Technology (with Secure Key <sup>7</sup> )	Enhances security and performance for a wide range of security applications <ul style="list-style-type: none"> <li>• Enables faster, higher-quality cryptographic keys and certificates</li> </ul>
Intel® Platform Protection Technology (with Trusted Execution Technology <sup>7</sup> (TXT))	Protects your business by increasing security against many digital threats <ul style="list-style-type: none"> <li>• Helps to ensure that the system launches into a known good state</li> </ul>
Intel Platform Protection Technology (with BIOS Guard 2.0 <sup>7</sup> )	Protects your system from malware and denial-of-service (DoS) attacks
Intel Platform Protection Technology (with OS Guard <sup>7</sup> )	Improves security by strengthening malware protection <ul style="list-style-type: none"> <li>• Provides hardware-based protection for your server operating system</li> </ul>
Intel® Software Guard Extensions (Intel® SGX)	<ul style="list-style-type: none"> <li>• Allows application developers to protect sensitive data from unauthorized access or modification by rogue software running at higher privilege levels,<sup>8</sup> secures data while in use in a Windows* or Linux* environment.</li> </ul>
USB Blocker for servers	Improves security and productivity <ul style="list-style-type: none"> <li>• Helps prevent malware and unauthorized data transfers<sup>7</sup> by blocking classes of devices while enforcing company policies and allowing flexibility to white-list specific devices</li> </ul>
<b>Responsive Performance To Grow Your Business</b>	
Intel® Advanced Vector Extensions 2 <sup>9</sup> (Intel® AVX2)	Significant performance benefit for developers of imaging, video editing, modeling, and simulation applications
Intel® Turbo Boost Technology 2.0 <sup>9</sup>	Higher performance when you need it most <ul style="list-style-type: none"> <li>• Accelerates processor and graphics performance for peak loads</li> </ul>
Intel® Hyper-Threading Technology <sup>9</sup> (Intel® HT Technology)	Faster performance for many demanding business applications <ul style="list-style-type: none"> <li>• Thread-level parallelism benefits multi-threaded and concurrently running applications</li> </ul>
PCI Express* 3.0 ports	Extra capacity and flexibility for storage and networking connections <ul style="list-style-type: none"> <li>• Up to double the I/O bandwidth of prior-generation PCIe* 2.0<sup>3,5,10</sup></li> </ul>
Serial ATA 3.0 (SATA 3.0)	Faster data access, system startups, and application load times <ul style="list-style-type: none"> <li>• Doubles data throughput versus previous generation for faster hard drive performance<sup>3,5,11</sup></li> </ul>
Intel® Virtualization Technology <sup>12</sup> (Intel® VT) for IA-32 and Intel 64 (Intel® VT-x)	Faster performance for core virtualization processes <ul style="list-style-type: none"> <li>• Improves application performance, live migration, provisioning, dynamic load balancing, and disaster recovery</li> </ul>
Intel Virtualization Technology <sup>12</sup> (Intel VT) for Directed I/O (Intel® VT-d)	Built-in hardware support for I/O virtualization <ul style="list-style-type: none"> <li>• Improves I/O performance, increases system reliability, and provides enhanced memory protection</li> </ul>
Intel® Pro Wireless Display (for workstations)	Provides complete collaboration solution with flexibility for workstations <ul style="list-style-type: none"> <li>• High-quality wireless audio and video experience with award-winning ease of use and security</li> </ul>

## INTEL® XEON® PROCESSOR E3-1200 V5 PRODUCT FAMILY SKU LIST

Processor Number <sup>Δ</sup>	CPU Cores	Graphics Core	Speed	L3 Cache	Intel® Turbo Boost Technology 2.0	Intel® HT Technology	Intel® HD Graphics P530**	Power
<b>Standard SKUs</b>								
Intel® Xeon® processor E3-1280 v5	4	0	3.70 GHz	8 MB	●	●	–	80 W
Intel® Xeon® processor E3-1275 v5	4	2	3.60 GHz	8 MB	●	●	●	80 W
Intel® Xeon® processor E3-1270 v5	4	0	3.60 GHz	8 MB	●	●	–	80 W
Intel® Xeon® processor E3-1245 v5	4	2	3.50 GHz	8 MB	●	●	●	80W
Intel® Xeon® processor E3-1240 v5	4	0	3.50 GHz	8 MB	●	●	–	80 W
Intel® Xeon® processor E3-1230 v5	4	0	3.40 GHz	8 MB	●	●	–	80 W
Intel® Xeon® processor E3-1225 v5	4	2	3.30 GHz	8 MB	●	–	●	80 W
Intel® Xeon® processor E3-1220 v5	4	0	3.00 GHz	8 MB	●	–	–	80 W
<b>Low-Power SKUs</b>								
Intel® Xeon® processor E3-1260L v5	4	0	2.90 GHz	8 MB	●	●	–	45 W
Intel® Xeon® processor E3-1240L v5	4	0	2.10 GHz	8 MB	●	●	–	25 W
Intel® Xeon® processor E3-1235L v5	4	2	2.00 GHz	8 MB	●	–	●	25 W

\*\*Intel HD Graphics P530 requires the latest-version Intel Graphics Driver, Intel C236 chipset, and Intel Xeon processor E3-1225 v5, E3-1235L v5, E3-1245 v5, or E3-1275 v5 to enable workstation application optimizations. Optimized Intel HD Graphics P530 is only available on select models of the Intel Xeon processor E3 family. To learn more about Intel Xeon processors for workstations, visit [intel.com/go/workstation](http://intel.com/go/workstation). To learn more about Intel Xeon processors for data center graphics, visit [intel.com/datacentergraphics](http://intel.com/datacentergraphics).

## INTEL® C230 SERIES CHIPSET

Chipset	Intel® HD Graphics P530	Intel® AMT 11.0	Intel® Node Manager	Gen 3 PCIe*	USB 3.0 Ports	SATA Ports 6 GB/s	Intel® Rapid Storage Technology	LAN
Intel® C236	●	●	●	20*	10*	8*	●	Integrated MAC
Intel® C232				8*	6*	6*	●	Integrated MAC

\* Port counts are dependent on how I/O flexibility is configured between PCIe\*, SATA and USB 3.0 for a total of 26 ports. Intel C236 will support SATA 1.5/3/6GB/s. Intel Anti-Theft Technology is not supported on any SKU of the Intel C230 series chipset.

For more information on the Intel Xeon processor E3-1200 v5 product family, visit [intel.com/xeone3](http://intel.com/xeone3)

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- <sup>4</sup> Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor series, not across different processor sequences. See [intel.com/products/processor\\_number](http://intel.com/products/processor_number) for details. Intel products are not intended for use in medical, lifesaving, life sustaining, critical control, or safety systems, or in nuclear facility applications. All dates and products specified are for planning purposes only and are subject to change without notice.
- <sup>1</sup> No computer system can provide absolute security under all conditions. Built-in security features available on select Intel Core™ processors may require additional software, hardware, services, and/or an Internet connection. Results may vary depending upon configuration. Consult your system manufacturer for more details. For more information, visit [intel.com/technology/security](http://intel.com/technology/security).
- <sup>2</sup> Intel vPro technology is sophisticated and requires setup and activation. Availability of features and results will depend upon the setup and configuration of your hardware, software, and IT environment. To learn more, visit [intel.com/technology/vpro](http://intel.com/technology/vpro).
- <sup>3</sup> Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors. Performance tests such as SYSmark\* and MobileMark\* are measured using specific computer systems, components, software, operations, and functions. Any change to any of those factors may cause the results to vary. You should consult other information and performance tests to assist you in fully evaluating your contemplated purchases, including the performance of that product when combined with other products.
- <sup>4</sup> Baseline system: Intel® Xeon® Processor E3-1275 v2, Intel HD graphics P400, 16GB (4x4GB DDR3-1600MHz ECC UDIMM), Western Digital WD2000FYYZ HDD, RHEL v6.3-2.6.32-278, ACRVMBY1.86C, IC13.  
Previous generation: Intel Xeon Processor E3-1276 v3 Supermicro 813M-3, X10SLM+-LN4f, Intel HD graphics P4600, 16 GB (4 x 4GB DDR3-1600MHz ECC UDIMM), Western Digital WD500GB HDD, RHEL6.5-2.6.32-431, 1.1a, IC14.  
New Configuration: Intel Xeon Processor E3-1275 v5, RVP8 Skylake Reference Board, Intel HD Graphics P530, 16GB (2 x 8GB DDR4-2133MHz ECC UDIMM), Intel SSD 530 Serries 120GB model SSDSC2BW120A4, CentOS 7 - 3.10.0-123.el7.x86\_64, SKLSE2R1.R00.X092.B00.1507130736, IC14.
- <sup>5</sup> Results have been estimated based on internal Intel analysis and are provided for informational purposes only. Any difference in system hardware or software design or configuration may affect actual performance.
- <sup>6</sup> For more information on Intel Rapid Storage Technology, visit [intel.com/p/en\\_US/support/highlights/chpsts/irmsm](http://intel.com/p/en_US/support/highlights/chpsts/irmsm).
- <sup>7</sup> No computer system can provide absolute security. Requires an enabled Intel processor and software optimized for use of the technology. Consult your system manufacturer and/or software vendor for more information.
- <sup>8</sup> No computer system can be absolutely secure. Intel technologies may require enabled hardware, specific software, or services activation. Check with your system manufacturer or retailer.
- <sup>9</sup> Intel technologies may require enabled hardware, specific software, or services activation. Check with your system manufacturer or retailer.
- <sup>10</sup> Eight gigatransfers (GT) per second and 128b/130b encoding in PCIe 3.0 specification enables double the interconnect bandwidth over the PCIe 2.0 specification. Source: [pcsig.com/newsroom/November\\_18\\_2010\\_Press\\_Release/](http://pcsig.com/newsroom/November_18_2010_Press_Release/).
- <sup>11</sup> The SATA 3.x specification enables double the data rate (from 3 GB/s to 6 GB/s) of that enabled by the SATA 2.x specification. Source: [sata-io.org/technology/6Gbdetails.asp](http://sata-io.org/technology/6Gbdetails.asp).
- <sup>12</sup> Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Learn more at [intel.com](http://intel.com), or from the OEM or retailer.

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Relative performance is calculated by assigning a baseline value of 1.0 to one benchmark result, and then dividing the actual benchmark result for the baseline platform into each of the specific benchmark results of each of the other platforms, and assigning them a relative performance number that correlates with the performance improvements reported.

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